THE CRUSHED STONE JOURNAL

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The National Crushed Stone Association

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Annual Meeting of the A. S. T. M.

Cleveland in 1929

JULY-AUGUST, 1928

IMPORTANT ANNOUNCEMENT

The National Crushed Stone Association wishes to announce the removal of its Executive Offices in Washington from the Earle Building to the Merchandise Building, 14th and S Streets N. W.

The transaction of Association business will be greatly expedited if those having occasion to correspond with the Washington Office will kindly address their correspondence to the new location.

The CRUSHED STONE JOURNAL

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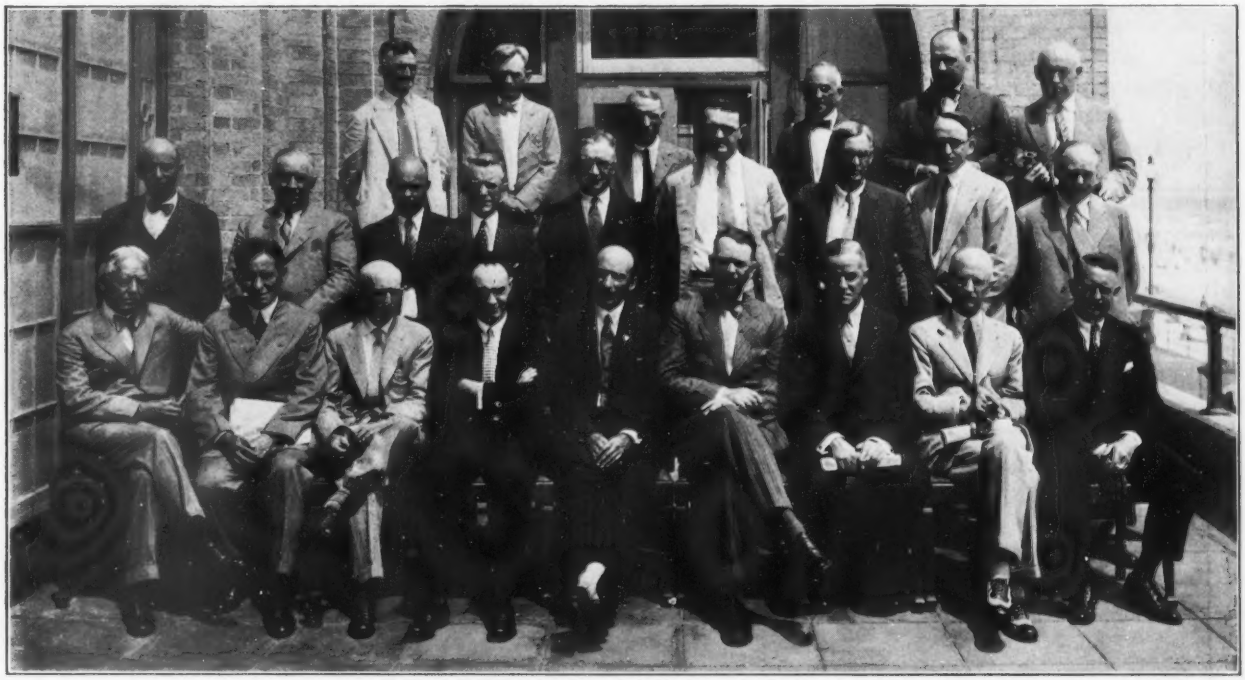
Cleveland is Selected for 1929 Convention

WHEN the Board of Directors of the Association convened for their mid-year meeting at the Ambassador Hotel, Atlantic City, on July 27, the first question for their consideration was the selection of the time and place for the next annual convention of the Association.

Following a precedent now established over many years, it was moved, seconded and unanimously carried that the Twelfth Annual Convention of the National Crushed Stone Association be held in January, 1929, during the week following that of the Road Show, which is to be held in Cleveland during the week of January 14.

The selection of the convention city was by no means an easy task as can be appreciated from the fact that in addition to innumerable written invitations received from cities and hotels located in all parts of the United States and Canada who were desirous of acting as host to our next annual convention, there were present in Atlantic City some twelve personal representatives who desired to appear before the Board on behalf of their respective organizations.

After hearing each of these representatives briefly discuss the particular attractions and facilities of this city, the question was opened for general discussion which was most thorough and participated in by prac-



Those Present at the Board of Directors' Meeting, Ambassador Hotel, Atlantic City, New Jersey, July 27, 1928

PUBLIC SQUARE, CLEVELAND, OHIO

tically every member of the Board present. It was finally agreed that, taking all factors into consideration, the best interests of the Association would undoubtedly be served by holding the next annual convention of the Association in Cleveland and it was so voted unanimously.

The unanimous vote which was obtained for Cleveland bears witness to the unselfish and whole-hearted cooperation of all members of the Board which is always forthcoming when important issues involving the interests of the Association are concerned.

In view of the excellent facilities offered by a number of the hotels in Cleveland, it was not deemed advisable to designate the headquarters hotel at the present time and consequently the choice of a hotel was left to the Executive Committee.

The rather unusual situation of having the conventions of the National Sand and Gravel Association, the American Road Builders' Association and the National Crushed Stone Association follow one another in successive weeks in the same city should prove a decided convenience and effect a substantial saving in time and money to those desiring to attend these three important meetings. This should be particularly true with regard to the rather large number of manufacturers who will exhibit at each of these three meetings.

Other Important Matters Discussed at Board Meeting

Directly after calling the meeting to order, President Graves read the following resolution on the death of W. Scott Eames, passed by the Board of Directors of the New Haven Trap Rock Company at a meeting held March 31, 1928:

"*Whereas*, Almighty God did on the 25th day of January, 1928, summon and take unto himself W. Scott Eames, our associate and friend; and

"*Whereas*, W. Scott Eames has been a Director and the General Manager of the New Haven Trap Rock Company since its organization, and has given its affairs the benefit of his exceptional ability, vision, integrity and force of character, and has ever been alert in its interests, and by his tact, genial personality and an ever ready desire to be of service has made innumerable friends, both for himself and this Corporation; and

"*Whereas*, W. Scott Eames has rendered effective and distinguished service to the National Crushed Stone Association, of which this Corporation is a member, and at one time was its President, and at the time of his death was a Director; and

"*Whereas*, W. Scott Eames has by these and other admirable traits endeared himself to each and every member of the Board of Directors of this Corporation, whose sense of personal loss is deep and profound, and who realize the irreparable loss this Corporation has suffered by his passing; therefore, be it

"*Resolved*, That we, the Directors of the New Haven Trap Rock Company, express in this formal manner, our sincere sorrow and regret in the death of W. Scott Eames, and extend to the members of his family our deepest sympathy for their great loss; and be it further

"*Resolved*, That a copy of this Resolution be forwarded to his family, and also to the National Crushed Stone Association."

The Board acknowledged receipt of this resolution and instructed the President to draft a suitable resolution on behalf of the Board of Directors of the National Crushed Stone Association, to be forwarded to the New Haven Trap Rock Company.

After deciding upon the time and place for the next annual convention, the Board gave its attention to the consideration of the report presented by President Graves on behalf of the officers of the Association and various committee chairmen. It was decided unanimously to accept the reports of the president and various officers and that the Board commend them for the excellent manner in which these reports had been prepared.

It was felt that in view of the large amount of property now owned by the Association in connection with the establishment of the research laboratory that it would be advisable to have the Association incorporated. After some discussion, the Board instructed the Executive Committee to determine upon an acceptable plan for incorporation and present it to the next meeting of the Board of Directors to be held at the time of the Cleveland Convention for their approval.

The Bureau of Internal Revenue has for some time been endeavoring to interest the Association in the possibilities of cooperating with them in setting up a standard depreciation scale covering various classes of equipment used throughout the industry. This matter was brought before the Board and after a general discussion it was felt that due to the many different classes of work for which the same piece of equipment might be used, as well as a number of other almost unsurmountable difficulties, it would be impossible to determine upon a practical scale of depreciation of the various equipment used throughout the crushed stone industry. The president and secretary of the Association were authorized to draft a letter informing the Bureau of Internal Revenue of the attitude of the Board of Directors and at the same time indicating to them that the Association would be glad to cooperate along general lines as much as possible.

The meeting was very well and enthusiastically attended and the thanks of the entire industry are due these men for their sacrifice of time and money in attending this meeting which undoubtedly comes at a time when a great many of them are unusually busy. Following is a list of those who were present at the meeting.

Otho M. Graves	John Rice	C. B. Andrews
H. E. Bair	H. E. Rodes	M. B. Garber
J. E. Cushing	James Savage	A. T. Goldbeck
C. M. Doolittle	F. W. Schmidt, Jr.	J. R. Boyd
F. O. Earnshaw	W. L. Sporborg	
E. E. Evans	J. W. Stull	Guests:
F. T. Gucker	T. I. Weston	N. C. Rockwood
E. J. Krause	W. F. Wise	H. E. Hopkins
Thos. McCroskey	A. L. Worthen	

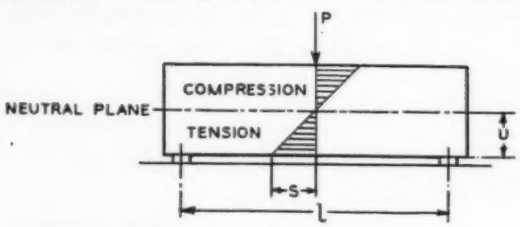
Concrete Beam Testing Machines

By A. T. GOLDBECK, Director,
Bureau of Engineering, National Crushed Stone Association

THE TESTING of pavement concrete for its transverse strength has developed rapidly in the past few years and at the present time about twenty-five per cent of the State highway departments and a number of county and municipal departments are using some form of beam testing machine. The primary reason for the acceptance of the beam test as the criterion of quality for concrete for highways is that concrete pavements and bases require high beam strength. It is logical, therefore, that highway concrete be tested for this particular quality. A secondary reason may be found in the case with which a beam test may be made, whether in the field or in the laboratory.

However, the rapidity with which the beam test has been developed has resulted in the use of a number of different types of beam testing machines, some of them made commercially, while others are home-made devices, constructed of materials conveniently at hand. Unfortunately, and all too frequently, insufficient thought has been given to the possible effect of the design of the machine on the transverse strength of the concrete, and it is the purpose of the present article to point out what seem to be primary defects in some of the types of machines now being used.

Before entering upon a discussion of the design of testing machines, it will be advisable for the sake of clarity to review that part of the elementary mechanics of beams which has to do with the production of stress. Let us assume that we have a simple beam subjected to a single concentrated load at the center as shown in Figure 1 and that the end reactions and the load are vertical. The stress produced in the bottom, at the point where failure is most apt to take place (the "dangerous" section) is as shown in the diagram. The so-called neutral plane in the beam is an imaginary area in which there is no stress. On one side of this plane (the upper side) there will be horizontal compressive stresses, while on the other side (the lower side) horizontal tensile stresses are produced. It is ordinarily assumed that the distribution of these stresses is in accordance with a straight line variation as shown in Figure 1, that the maximum tension is produced at one extreme "fiber" and maximum compression at the other extreme. The stresses in other "fibers" are in proportion to their distance from the neutral plane. We are not interested in the horizontal compressive stress produced in the concrete beam, but we are very much interested in the tensile stress because concrete is so very much weaker in tension than in compression. The formula for calculating the maximum tensile stress in a beam is



WHEN THE BEAM FAILS S EQUALS THE MODULUS OF RUPTURE
Figure 1

$$S = \frac{Mc}{I}$$

Where

M = bending moment at the particular section of the beam we are considering.
c = the distance from the neutral plane to the outer fiber of the beam under tension.
I = the moment of inertia of the beam section about its neutral axis.

When the beam is a rectangular beam, the quantity

$$\frac{c}{I} \text{ becomes } \frac{6}{bd^2}$$

Where

b = breadth.
d = depth of the beam.

The quantity M depends upon the loading conditions, whether the beam is a cantilever, a simple beam with a single load at the center, or a simple beam loaded at 2 points. For the particular case shown in Figure 1,

$$M = \frac{Pl}{4}$$

Where

P = the magnitude of the single concentrated load.
l = span length.

The value for the extreme fiber stress S at the center section of the beam becomes

$$S = \frac{3\ Pl}{2\ bd^2}$$

This formula applies only within the elastic limit of the material under consideration. When a specimen fails, obviously the elastic limit of the material has been exceeded, but arbitrarily the same formula is applied in calculating the stress in the most remote fiber, consequently the stress so calculated is not generally the exact stress which exists at the instant of failure. In the case of concrete, however, the error introduced by the use of the flexure formula for calculating the stress at failure (the "modulus of rupture") probably is not very great because the stress-strain curve for concrete in tension does not deviate much from a straight line. The modulus of rupture may be defined as the stress in tension which exists in the most remote fiber of the beam at the dangerous section when the specimen fails and is calculated by the flexure formula

$$S = \frac{Mc}{I}$$

The Error in Modulus of Rupture Due to Design of Beam Testing Machines

Beam machines now being used for testing concrete are of many types. Some of them test the beams as cantilevers, others as simple beams with the load applied either at the center or at the third points. It will be out of place to discuss the details of design of the various testing machines but it will be useful to consider the essential features of these machines and the effect of these features on the stress produced in the concrete test specimens.

Case I-A

In this case the specimen is tested as a cantilever beam. It rests upon a support at point A and is held down to that same support by means of a clamp applied at point B. Load is applied by hanging an auxiliary beam at the end of the specimen. This beam is loaded at its outermost end and downward force on the specimen thus results at point C and upward force at point D. In this machine the load applying blocks C and D are rigidly fastened to the load applying beam.

Let it be assumed that the horizontal distance from D to C is 10 inches. Assume the stress in the concrete to equal 600 lbs. per sq. in. at the dangerous section. The upper fiber in the concrete beam will then elongate an amount due to an average stress of 300 lbs. per sq. in. This elongation equals

$$300 \times \frac{10}{3{,}000{,}000} = 0.001 \text{ inches.}$$

Let us assume that the load applying beam is made of wood and that it is so designed that a unit fiber stress of 1000 lbs. per sq. in. is produced in the wood at the dangerous section at the same time that 600 lbs.

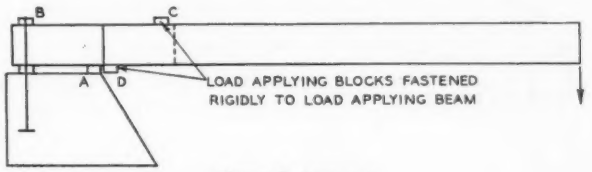


Figure 2, Case I-A

per sq. in. is produced in the concrete. The average stress in the wood in the upper fiber of the load applying beam extending from C to D then equals 500 lbs. per sq. in. and the elongation equals.

$$500 \times \frac{10}{1{,}500{,}000} = 0.0033 \text{ inches.}$$

It is thus seen that the fibers of the wood have stretched 0.0033—0.001 or 0.0023 inches more than the concrete. Consequently, there will be a tendency for load applying block C to slide outward toward the end of the concrete beam and a horizontal force due to friction will be produced. In calculating the value for modulus of rupture it is assumed that the only stress which is produced in the concrete is that due to the bending effect of vertically applied force but in this type of testing machine, unconsciously, we have applied horizontal force as well as vertical force both at points C. and D. It is recognized that the bending moment at the dangerous section is equal to the vertical load applied at the end of the load applying beam multiplied by its lever arm and this is so no matter how much horizontal force is introduced at the end of the beam through the effect of deformation. None the less, it would seem well to avoid the creation of unknown horizontal forces whose stress effects are uncertain.

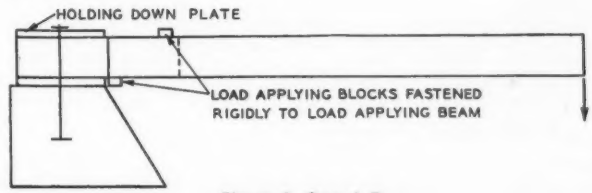


Figure 3, Case I-B

Case I-B

Still another variation in the cantilever type of machine as above described is that shown in Fig. 3. In this case the beam is clamped down rigidly to its support by means of a cover plate which theoretically does

not affect the fiber stress at the dangerous section as compared with I-A, since the bending moment is identical in both cases. However, it would seem that with

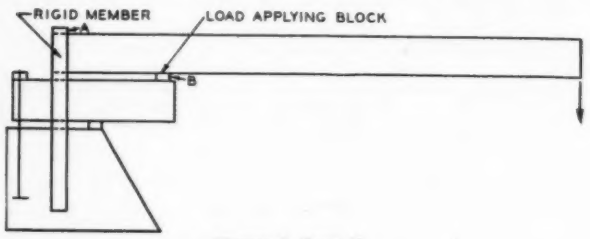


Figure 4, Case II

this method of support for the specimen and with this method of clamping, uncertain stresses are induced due to the clamping action. It is certain that there can be a wide variation in the vertical forces acting on a beam at the supports due to this method of holding the beam in position, and because it is impossible to tell when conditions are being duplicated, this method of clamping the beam in position is to be avoided.

Case II

In Case II the load is applied to the beam by an auxiliary beam as shown in Figure 4. In this particular design the end of the load applying beam is tied down to the support with a rigid member which does not permit of horizontal motion of point A with respect to the support. Bearing block B rests upon the concrete specimen and vertical load is applied at the end of the load applying beam. As the upper fiber of the concrete stretches under load, point B at the top of the concrete beam will tend to move to the right. Point B on the under side of the load applying beam, on the other hand, will tend to move to the left because the

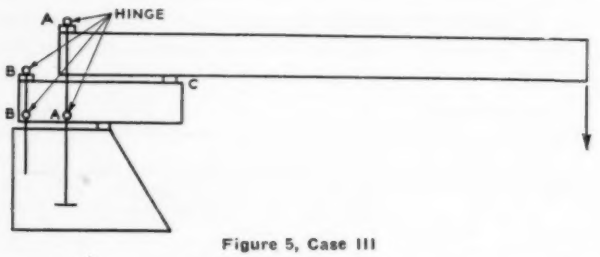


Figure 5, Case III

lower side of the load applying beam in this case is in compression and point A is rigidly fixed. Therefore, the elastic movement of the entire system under load tends to create relative motion between the end of the concrete specimen and the point immediately above it in the load applying beam. The tension produced by bending is thereby decreased and this type of machine gives high results for modulus of rupture. No doubt it would be possible to arrive at a fair estimate of the error occurring under this condition of loading, provided the exact details of the machine were known. This, however, is unimportant. The important point lies in the fact that a machine of this design gives uncertain results.

Case III

The machine shown in Figure 5, Case III (is a modification of that in Case II. Here, the member A holding down the load applying beam is not a rigid member as in Case II, but it is hinged at AA. Moreover, the member holding down the concrete specimen is also hinged at BB. The fact that we have hinged the holding down member AA, means that the force of the load applying beam at A must be a vertical force, it cannot act in any other direction than AA. We have applied our load as shown by the arrow leading in a vertical direction, and therefore the load arriving at

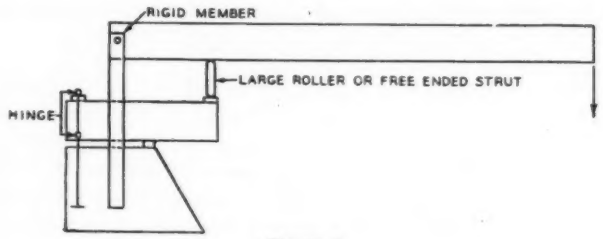


Figure 6

the end of the concrete specimen must, of necessity, be vertical. The reaction at the Block B must be vertical because of the hinges at BB. It follows that the reaction at C must also be vertical and the concrete specimen is acted upon only by vertical loads and the stress produced is bending stress due to vertical forces alone. The material of which the load applying beam is made plays no part whatever in influencing the stress in the concrete specimen as has been shown to be so in Cases I-A and I-B. Modification of the machine in Figure 5 may be made by making use of so-called flexure members at AA and BB instead of using hinges. Such members will bend laterally when load is applied and will thereby offer practically no resistance to horizontal movement of the end of the beam and therefore will not influence the stress or the modulus of rupture of the concrete.

Still another design, which should accomplish the same purpose as Case III, is illustrated in Figure 6. In this case a large roller is used at the end of the beam so that the load applied at this point must be essen-

tially vertical, notwithstanding the fact that the inner end of the load applying beam is fastened by means of a rigid support. In some machines, very small rollers,

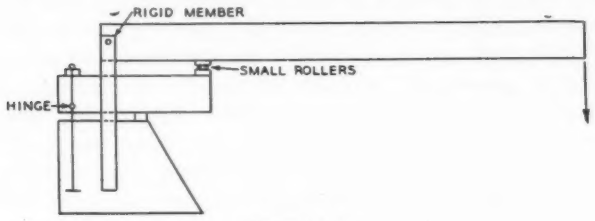


Figure 6-A

only ¼ in. in diameter, have been employed as illustrated in Figure 6a to insure that the load applied at the end of the concrete specimen is vertical. With this method there is still the chance of error due to the possibility of high rolling friction of the small rollers. It will be safer to avoid the use of small rollers. There are a number of other variations in machine design which could be discussed but perhaps enough has been said to emphasize the fact that extreme care must be used to see that no machine is employed for beam testing which applies horizontal components of force as well as vertical components due to the elastic deformation of machine or specimen, or both.

Modification of Existing Machines

To insure vertical reactions and loads, it is quite possible to modify some of the machines now being largely used and which are giving uncertain results. For instance, Case I-A may be very simply modified as shown in Figure 7. This modification consists in the use of a hanger for the load applying block A and for the reaction block B. In this case, instead of attaching load applying block A rigidly to the edge of the load applying beam, it is swung from a hanger which is hinged at the lower side of the load applying beams. Similarly, instead of bolting load applying block B rigidly to the specimen, it is swung at the end of a hanger hinged at its lower end near the support. With

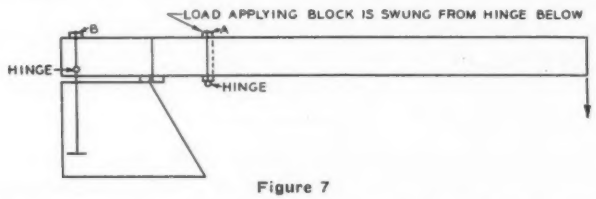


Figure 7

this arrangement, all of the forces acting on the specimen remain vertical forces as the load is applied and the modulus of rupture is therefore uninfluenced by unknown horizontal forces as in Case I-A.

Case II, as has already been indicated, may be modified to give correct results as shown in Case III.

Discussion of Shearing Stress and Bending Stresses Produced With Different Types of Testing Machines

It will be assumed that proper precautions have been taken as outlined above to insure that nothing but vertical forces are acting on the concrete specimen, no matter what design of machine is employed. Some of the possible methods of testing beams together with the resulting shear and moment diagrams are illustrated in Figures 8a to 8d. In the cases assumed, the ratio of moment arm to depth of beam has been made 1½ to 1. Cases A, B and C are essentially alike, except that in Case A there is a zone of zero shear, whereas in B and C the shear changes suddenly from positive to negative. Also, in Case A there is a small zone of constant bending moment, whereas in B and C the

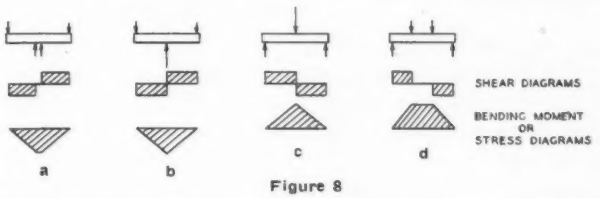


Figure 8

bending moment is maximum only at the center. It is to be understood, of course, that these diagrams are ideal rather than actual. In Figure 8d in which the loads are applied at two points, there is a wide zone of zero shear and of constant maximum bending moment. Evidently the shear conditions are somewhat different in Case D as compared with Cases B and C. Whether this seriously affects the results of the cross-bending test, because of a difference in principal stresses resulting from combined shear and bending stress, remains to be determined. It may be said of Cases A, B and C that should the concrete be weak at some point other than at the center, failure may take place at that point rather than at the point of maximum bending moment. In this case the actual lever arm would have to be measured to calculate the bending moment. In Case D, the same condition may arise. In Case D, however, since there is maximum bending moment over the middle portion of the beam, failure within that portion must take place at the weakest section, and when the break occurs within the middle section the modulus of rupture may be calculated without measuring the position of failure, as must be done in the Case of A, B and C. Should failure take place outside of the middle

portion in Case D, it will be necessary to measure the position of the break to determine the bending moment from which to calculate the modulus of rupture.

There are a number of points in connection with beam testing which remain to be settled in addition to the type of machine. They may be enumerated as follows:

1. Establishment of the proper relation of length to depth of beam.
2. Establishment of the proper size of beam for various maximum sizes of aggregate.
3. Establishment of the limits of the rate of load application.

There are faults in certain machines which are so obvious that they should not need mentioning. Among them are:

1. The use of a dynamometer placed in such a position that it weighs not only the load, but also the friction in several pulleys.
2. No provision to insure central rather than eccentric application of load.

In conclusion, let it be strongly emphasized that the testing of concrete beams in the field should be done with machines which are just as perfect in theory as those used in the laboratory. It is generally just as simple to design a machine which embodies theoretically correct principles as to design one which introduces the possibility of error of unknown amount. No recommendation as to type of machine and dimensions of specimen are warranted at the present time. Committees are at work endeavoring to determine the most accurate and convenient scheme for making beam tests. It is hoped, however, that the preceding discussion will be of some assistance in showing some of the faults to be avoided in beam testing machine design and it is believed that the preceding discussion will explain many of the wide variations being obtained by various testing laboratories using different types of machines for making transverse tests.

Making a Road His Monument

HILLSBORO, IOWA, has been taken out of its isolation. Once more or less marooned on "the worst mud road in Iowa," the town is now connected with the rest of the world with a 10-mile highway of concrete.

Standing alone, this does not mean much to anybody but a resident or near neighbor of Hillsboro. Thousands of other American cities and towns, having access to nothing but undependable mud roads as late as a decade ago, are now in the happy posture of Hillsboro.

This new 10-mile stretch of concrete in Iowa was not financed by a State, a county, a town or a township. Federal aid did not enter into its building. It was not reared out of the proceeds of motor car licenses or gasoline taxes. No man's bills will be increased because of the existence of this good road unless the presence of the road increases the value of property adjacent to it, and if it does that, the townspeople of Hillsboro and the farmers roundabout will have double reason to rejoice. Any increase in taxes due to increment of land values will be more than balanced by the material and social benefits the road will bring.

This road is the gift of a private citizen. It helps to emphasize the gratitude he feels because he prospered and gained a large fortune. It means that he has put into the public business something of what he was enabled to amass in private enterprise. For building the road he paid or will pay $250,000 to $300,000. He volunteered to assume this obligation and to turn over the results of his philanthropy to his friends and neighbors for a permanent community benefit.

His name? Alexander Coleman, farmer, nonagenarian, living in retirement in Fort Dodge. Mr. Coleman knows what it means to depend on mud roads. He has had plenty of experience of that kind. He had lived 60 years before automobiles became something else than rare curiosities and subjects of guffaws for skeptics. Better than most men he knows all the values of a hard-surfaced road today. This particular road, call it what the people might, was to be a memorial to himself and his family, a benefaction to those who live in and enjoy the motor car age, a saver of time and wear and tear, an enlarger of a neighborhood, a broadened opportunity for the education of youth, a shrinker of distances to markets.

Mr. Coleman has done for a small town something that savors of what many men of wealth have done for large cities, and he has the satisfaction of living to see the practical results of his benefaction and the pleasure it affords to thousands of his fellowmen.

Minneapolis Tribune.

A young lawyer, pleading his first case, had been retained by a farmer to prosecute a railway company for killing twenty-four hogs. He wanted to impress the jury with the magnitude of the injury.

"Twenty-four hogs, gentlemen. Twenty-four; twice the number there are in the jury box."—The Furrow.

Annual Meeting of the American Society for Testing Materials

The annual meeting of the American Society for Testing Materials, held at Atlantic City from June 25 to 29, had several sessions of considerable interest to the producers of crushed stone. The session in the evening of Friday, June 29, was of particular value. A report was presented by Committee C-9 on Concrete and Concrete Aggregates in which was discussed a statement of procedure for the design of concrete mixtures by the water-cement ratio method. Several tentative standards were revised and information was given on the abrasion tests of aggregates. The report also included a summary of the published information on admixtures and a bibliography on elasticity of concrete.

A paper was also read by George Conahey on the Effect of Admixtures on the Water-Cement Ratio-Strength Relation of Concrete. W. F. Purrington and H. C. Loring of New Hampshire described an interesting method of measuring the workability of concrete with which they have been experimenting during the past winter. It consists in the measurement of the power consumed by a concrete mixer when mixing various kinds of concrete. A considerable difference in the workability in various concretes was noted, depending upon their consistency, the presence of admixtures and other variables.

G. A. Smith described The Measurement of Workability of Concrete by the use of a penetration apparatus which is said to be an index of the workability of concrete as used in construction. The Permeability of Concrete was discussed by Ira L. Collier who made permeability tests on specimens 9 inches in diameter and 8 inches high under pressures up to 150 lbs. per sq. in. In this series the question of coarse aggregates was not discussed but the consistency of the concrete was varied. In still other tests the relation of fine to coarse aggregate was changed.

C. H. Scholer discussed a series of tests which is of very great interest to crushed stone producers at the present time. The title of his paper was "Some Accelerated Freezing and Thawing Tests on Concrete." He describes a type of apparatus for conducting accelerated freezing tests on both concrete and stone. At the present time accelerated tests of this nature are of very great importance to the producers of aggregates, for more and more attention is being paid by engineers to the question of the weathering qualities of concrete. The laboratory of this Association is procuring an apparatus for making rapid weathering tests.

The paper by H. F. Gonnerman and E. C. Shuman entitled, Compression, Flexure and Tension Tests of Plain Concrete, presents the results of an extended series of tests to determine the tensile and compression strengths of concrete cylinders and the modulus of rupture of plain concrete beams. The gradation and size of aggregate, the mixing-water content, age of test, size of specimen, type of aggregate and curing conditions were all discussed in this paper. The aggregates which were used in one series consisted of limestone and calcareous gravel from the Chicago District, Chicago blast furnace slag, New York siliceous gravel, Ohio dolomitic limestone, New Jersey trap rock, Wisconsin granite and Minnesota sandstone. It will be interesting to note that the characteristics of the coarse aggregate seem to play a very important part in the results of these tests in comparison, tension and cross bending and Chicago limestone gives excellent results in this series.

A paper by T. F. Willis and F. N. Wray entitled, The Effect of Several Mechanical Features of Testing on the Determination of the Flexural Strength of Plain Concrete, pointed out the need for standardization of the flexure test and showed the difference in results obtained in different methods of making the transverse test.

In the present issue of the Journal a discussion is presented by the Director of the Bureau of Engineering pointing out the reasons for the difference in results obtained by different beam testing machines. The large variations in cross-bending tests obtained with different machines should not be used in condemnation of the cross-bending test but rather should show the need of more careful design of testing machines to eliminate unsuspected forces than has been devoted to the design of most of the cross-bending machines now being used.

L. N. Edwards and H. L. Greenleaf made some tests for the bond strength of steel which more nearly simulate practical conditions than most laboratory tests of this nature. They found that the bond was very greatly decreased when the steel bars were embedded in the specimen in a horizontal position due to the collection of air bubbles on the underside of the bar which partially destroyed the bond.

At another session of the meeting a report was presented by Committee D-4 on Road and Pavement Materials which will be found of interest, particularly

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The Crushed Stone Journal

J. R. BOYD, Editor
A. T. GOLDBECK, Director, Bureau of Engineering
The National Crushed Stone Association

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Cleveland in 1929

Unquestionably, a very wise selection was made by the Board of Directors when at their mid-summer meeting recently held in Atlantic City and described elsewhere in this issue, they selected Cleveland, Ohio, as the city to act as host for the Twelfth Annual Convention of the Association.

Our membership located in the Cleveland territory has assured us of their whole-hearted and enthusiastic cooperation to make the next annual foregathering of the industry the most successful in the history of the Association. In view of the remarkably successful conventions held during the last few years, this is not a goal to be undertaken lightly, but from our knowledge of our Cleveland members, we believe that the honor of entertaining our next annual meeting has been entrusted to most willing and competent hands and that if humanly possible, the Cleveland Convention will eclipse all of its predecessors.

Geographically, Cleveland enjoys an ideal location. It is within an over-night's ride of half the population of the United States and Canada and is directly served by Pullman cars from over a dozen cities, widely scattered throughout the country. This enables convention visitors to reach Cleveland with a minimum of inconvenience.

Cleveland is the fifth city of the United States in population, numbering within the metropolitan area in excess of 1,100,000 inhabitants. Within its three thousand factories employing over 200,000 wage earners, there are manufactured 15,000 different kinds of articles foremost among which are carbons, auto parts, storage batteries, printing presses, paints and many others too numerous to mention.

In short, Cleveland offers much of interest to the visitors within her gates and in cooperation with the Cleveland Tourist and Convention Bureau it is expected that one or two trips covering the outstanding points of interest will be arranged.

Excellent facilities are to be had at the various hotels in Cleveland, particularly with regard to the housing of the Manufacturers' Division Exposition of Quarry Equipment and Machinery, an indispensable feature of our annual meetings. The selection of the headquarters hotel has not as yet been made, but it is expected that announcement of the selection will be made in the next issue of the Journal.

It is by no means too early to begin to plan to attend the Twelfth Annual meeting of the crushed stone industry, and we wish to extend to every crushed stone producer of the United States and Canada, whether or not affiliated with the Association, a most cordial invitation to meet with us in Cleveland on January 21-24, 1929.

Reprints From West Baden Convention Proceedings

IT QUITE frequently happens that some of the papers presented at our annual meetings are of such outstanding interest that a large number of our members would be interested in having reprints of these papers. It is very economical to have these reprints made just after the publication of the Proceedings as by doing it at this time advantage can be taken of the fact that the type which has been set for the Proceedings can be used in making the reprints.

In connection with Mr. Worthen's paper presented at our West Baden Convention, we have already received a request for five hundred reprints and it was really this request that prompted the thought that perhaps a good many others of our members might desire to take advantage of this opportunity of obtaining at a very economical price reprints of some of the papers which were of particular interest to them.

It is possible to hold the type of the Proceedings for a matter of only two or three weeks or the expense becomes prohibitive and therefore anyone desiring to take advantage of this opportunity should immediately communicate with the Washington Office.

West Baden Convention Proceedings

AS THIS issue of The Crushed Stone Journal goes to press, distribution of the West Baden Convention Proceedings has practically been completed. It is hoped that all of those who have placed orders for the Proceedings have received their copies in good condition by this time. It is, of course, possible that due to error some of those who placed orders have not yet received their copies and it would be very much appreciated if all instances of this nature were immediately called to the attention of the Washington Office. Necessarily the edition of the Proceedings is quite limited and it is therefore suggested that all those desirous of obtaining copies, immediately forward their orders to the Secretary's Office. It will be remembered that the charge is $2.00 per copy.

Record July Construction in 37 Eastern States

JULY construction contracts in the territory east of the Rocky Mountains reached a total of $583,432,400, according to F. W. Dodge Corporation. The area covered in this record consists of 37 States and includes about 91 per cent of the total country. The above figure was the highest July contract total on record. It was 9 per cent ahead of the total for the same month of last year, but there was a drop of 10 per cent from the total for June of this year.

Last month's record brought the total amount of new building and engineering work started since the first of this year up to $4,028,299,900, establishing a new high record for new construction contracted for during the first seven months. The increase over the first seven months of 1927 was 8 per cent.

Analysis of the July building record showed the following outstanding items: $228,734,800, or 39 per cent of the total, for residential construction; $137,074,700, or 23 per cent, for public works and utilities; $95,696,800, or 16 per cent, for commercial buildings; $36,926,400, or 6 per cent, for educational projects; and $31,399,800, or 5 per cent, for industrial projects.

New work contemplated in the 37 States during the past month reached a total of $647,682,700, being a loss of 37 per cent from the amount reported in the preceding month and a drop of 7 per cent from the amount reported in July of last year.

ASHES TO ASHES AND DUST TO DUST[1]

By C. W.
Brooding Engineer
Bethlehem Handbook Hatchery

The Voice of the Prophet:

Bricks will break, and rocks will fall,
Paint will peel, and concrete spall,
Wood will rot, and steel will rust,
Ashes to ashes, dust to dust.

The Concrete Crowd:

Ashes to ashes and dust to dust,
Wood will rot, and steel will rust,
Bricks will break, and rocks will fall,
For permanence you need a *concrete* wall.

The Fellowship of Fabricators:

For permanence specify *structural steel;*
Timber will rot and concrete peel,
Clay bricks will fall when mortars grow faint,
Steel lasts forever with two coats of paint.

The Laddies of the Lumber Legion:

Wood lasts forever with two coats of paint,
And it's cheaper than steel; we'll be warped, if it ain't!
Concrete will crumble, and bricks are no good.
Ask dad how to build, and he'll say it with *wood.*

The Klay Kiln Klan:

Ask dad how to build, and he'll say it with *bricks!*
They'll be standing the gaff when all others are nix;
When timber and concrete and steel have gone bust,
Ashes to ashes and dust to dust.

The Paint People:

Ashes to ashes and dust to dust,
Timber will rot, and steel will rust,
Bricks will break, and concrete will spall,
Save the surface and you save it all!

Prophet and Chorus:

Bricks will break, and rocks will fall,
Paint will peel, and concrete spall,
Wood will rot, and steel will rust,
Ashes to ashes and dust to dust.

[1] From "Random Lines"—Engineering News-Record, Vol. 100, No. 23.

Annual Meeting of the American Society for Testing Materials

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that section which presents a specification for Portland Cement Concrete for Pavements and Bases. Other sessions of the annual meeting were devoted to the discussions of metals, rubber, textiles, coal, timber, petroleum products and other materials.

CHIPS

Reason Enough

Judge Landis, baseball Czar, was a much feared questioner when he sat on the Federal bench at Chicago. Whenever he began to figuratively "look through" a witness, he frightened all thoughts of evasion from the mind of the witness. And one day, so the loungers say as they recount stories of his days on the bench, there appeared before him a little Jew who was involved in the burning of his store. "What time did you take out your insurance papers, Abie?" questioned the Judge. "At nine o'clock, your Honor," responded Abie. "What time did the fire start?" demanded Landis. "Twelve o'clock," faltered the nervous Abie. "Why the unnecessary delay?" thundered the Judge, and in confusion Abie faltered. "Our fire sale ads vere not done!"

"Nature" explained the philosopher, always tries to make compensation. For instance, if one eye is lost, the sight of the other becomes stronger, and if a person grows deaf in one ear, the hearing of the other ear become more acute."

"Faith," said Pat, "and I believe you're right, for I've noticed that when a man has one leg shorter the other is always longer."—Exchange.

It's All Right

An American was prowling around a Scottish churchyard. His eyes caught an epitaph, "Lord, she was thin."

"Say, sexton, what d'ye make of that?" he asked.

"That's all rict, sir; the sculptor went over near the edge of the stone and didna leave room for the 'e'."

Small Daughter: "Mama, can we have some more letters? We played postman and gave a letter to every lady in the block."

Mother: "But where did you get enough letters?"

Daughter: "Oh, they were in your trunk in the attic, all tied up in blue ribbon."—Exchange.

His Master's Voice

Mr. Stocks (slumming on the East Side)—"Well, well, poor boy; so your father is dead. How did he die?"

Urchin (who can't be bothered with questions)—"Aw, he strangled to death. He was sittin' in a lunch room eatin' some horse meat when some guy yells 'Whoa,' and the stuff stopped in his throat."

—N. Y. C. Lines Magazine.

An elderly gentleman of bookish learning was haled into court charged with drunkenness.

"What have you to say for yourself?" said the judge.

"Oh, man's inhumanity to man countless thousands mourn," replied the man. "I'm not so debased as Poe, so profligate as Byron, so ungrateful as Keats, so vulgar as Shakespeare, so timid as Tennyson, so intemperate as Burns—"

"That will do," said the judge, "ninety days."

Turning to the officer, the judge said: "Better take down the names of the people he named and round 'em up. I think they're a bad lot."—The Leatherneck.

A man walked into a hotel and placed his umbrella in the rack with this sign on it, "This umbrella belongs to the champion prizefighter of the world; I will be back."

An hour later he returned, the umbrella was gone, and this sign hung in its place, "The umbrella was taken by the champion runner of the world; I won't be back."—The Leatherneck.

The Customs House official at Southampton viewed the American with suspicion. Then he addressed her: "Madam, you are not allowed to bring in a dog."

"I have no dog," she snapped.

"Then, madam, am I to conclude that the tail hanging below your coat is your own?" he asked suavely.

—Ireland's Own.

IMPORTANT ANNOUNCEMENT

The National Crushed Stone Association wishes to announce the removal of its Executive Offices in Washington from the Earle Building to the Merchandise Building, 14th and S Streets N.W.

The transaction of Association business will be greatly expedited if those having occasion to correspond with the Washington Office will kindly address their correspondence to the new location.